SECURITY SYSTEM

The present invention relates to a security system. Such a security system is particularly suited for use in cash in transit operations such as where cash is delivered to automatic teller machines. The system also comprises improvements to the security of automatic teller machines.

BACKGROUND OF INVENTION

Automatic teller machines (ATM) are now common. Each machine carries a number of removable cassettes in which money is stored. Stamps or tickets may be stored in similar types of machines. It is necessary, from time to time, to replenish the cassettes in the ATM. This is normally done at fixed intervals based on the expected usage of the machine. A security vehicle and guards is dispatches from a central location to take full cassettes to an ATM. The cassettes may typically contain £200,000 and consequently theft of one or more cassettes represents a relatively easy way of obtaining a significant amount of money for a criminal. Furthermore, when a new cassette is installed in a machine, a "empty" cassette is removed from the machine. However, since the replenishment is done at predetermined intervals, rather than when the cassettes are low or empty, the "empty" cassettes may in fact contain a considerable amount of cash. Some £3.5 million was lost in 1995 in the UK alone through robberies on ATM machines when money was being transferred.

BRIEF SUMMARY OF INVENTION

According to a first aspect of the present invention, there is provided a security unit comprising locking means for locking the security unit onto a container to be protected,

The at least two compartments may be collapsible reservoirs arranged to expel their contents via a common delivery path. The compartments may have frangible regions or pressure actuated valves which allow the content to be released when pressure in excess of a threshold is exerted on the reservoirs.

Alternatively, two or more compartments may be arranged in series such that an increase in pressure within an Nth (for example, first) compartment above a threshold opens a fluid flow communication path with an N+ 1th (for example second) compartment, the final compartment being arranged to deliver the mixture of components via a delivery aperture which is arranged to open in response to pressure exceeding a predetermined threshold.

Preferably the pressure is provided by a compressed gas held within a reservoir. The gas may be allowed to escape by virtue of an explosive change being activated to rupture a closure of the reservoir.

The gas reservoir may be wholly contained within the first compartment, or may be in fluid flow communication with it.

BRIEF DESCRIPTION OF DRAWINGS

The present invention will further be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 schematically illustrates a security container constituting an embodiment of the first, second and third aspects of the present invention;

Figures 12a and 12 b schematically illustrate the operation of a mechanically powered dye injection system;

Figures 13 schematically illustrates a sleeve security system whereby removal of the sleeve when the system is active cause the dye injectin system to become activated via an inductive coupling;

Figures 14 schematically illustrates a blast detector constituting an embodiment of the present invention;

Figure 15 illustrates an embodiment of the sensing array within a tamper resistant element; and

Figure 16 schematically illustrates the rack system of the cash in transit vehicle.

DETAILED DESCRIPTION

Figure 1 schematically shows a cash-in-transit security container in cross section. The container, generally indicated as 2, provides protection against theft while the cash is being carried from a delivery vehicle to an automatic teller machine. This has traditionally been the weakest point in a security system, since the guard may be physically attached in order to render him incapable, and then the security container may be removed from the guard. An ATM cash cassette 4 is locked to an interface card 6, which contains a plurality of locking components in order to enable it to lock to various other components of the system. A hood 8 is also locked to the interface care 6 and carries an internal module 10 which

expose the delivery outlet 140. The sleeve is urged to first position by a compression spring 152.

In use the male part 100 is attached to an automatic teller machine and positioned such that it engages with the female part 102 carried on a cash cassette when the cash cassette is at its operating position. As the cash cassette is loaded, the casing 110 is moved towards the male part 100 and the sleeve 150 engages with the conical recess 112 and is pushed against the urging of the compression spring 152 to uncover the aperture 140. This relative motion also ensures than any debris in the aperture 112 is pushed past the outlet pipe 116 thereby ensuring that debris cannot be deliberately introduced into the aperture 112 in order to defeat the security systems. A position sensor (not shown) monitors the relative motion of the sleeve 150 with respect to the remainder of the male unit to ensure that it reaches the correct position. Additionally, a latching arm (not shown) extends from the male unit towards a matching element on the female unit. The latching arm can only engage if the male and female units are correctly positioned with respect to one another. The position of the latching arm and also of the sleeve 150 is monitored by a controller (not shown) and only when these are at their correct position does the controller acknowledge that the security system is operable. The locating elements may be arranged to lock the cash cassette at a first position corresponding to the operating position of the cassette in the ATM. However, the locking elements may include sacrificial or weakened elements which, in the event that an unauthorized attempt is made to forcibly remove the cash cassette, allows the cassette to be moved to a second, slightly withdrawn position, which is detected by a position sensor. This movement to the second position causes the ink delivery system to be activated so as to spoil the contents of the cassette. The provision of

hood 8 (incorporated the control element 10) must be positioned for programming prior to being released from the vehicle.

It is thus possible to provide a security system suited for use in cash-in-transit and ATM operations. Furthermore, such a security system also simplifies maintenance of an automatic teller machine. Hitherto, it has been necessary to arrange for security guards and a cash-in-transit vehicle to come and collect the cassettes from an ATM before it can be serviced since opening the safe of the ATM in order to service it has posed a security risk. However, with the use of a dye based spoiling system as part of the ATM, cassettes may remain in the ATM and be protected by the security system during servicing. In the event that it is necessary to remove a cassette, the cassette may be placed in a sleeve and hood combination as described herein before. Such a hood may be a service hood specially programmed to allow only a very minimal walk time in order to ensure that the cassette cannot be moved far from the ATM, or may include a proximity based communication system to the ATM again to ensure that the cassette cannot be removed far from the ATM without triggering the spoiling mechanism.

Furthermore, the enhanced security systems provided with an ATM may enable the heavy steel safe that normally surrounds an ATM to be replaced by a lighter safe made of similar materials to the sleeve 12 as hereinbefore described.